

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

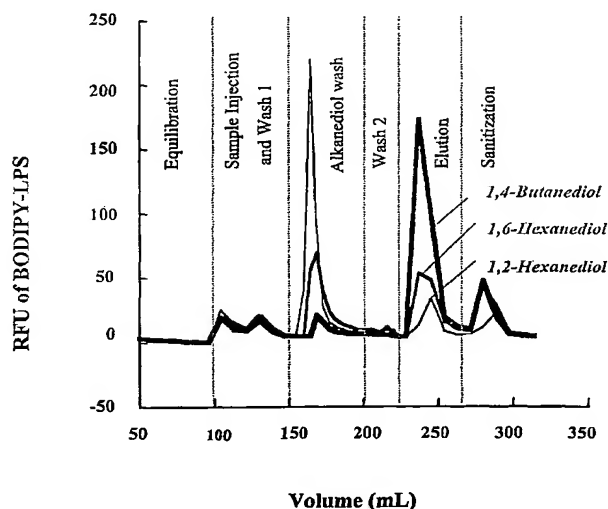
PCT

(10) International Publication Number
WO 2005/003152 A1

- (51) International Patent Classification⁷: **C07K 1/18**, (74) Agent: **RAMEY III, William, P.**; P.O.Box 318, 29160 Intervet Lane, Millsboro, DE 19966 (US).
B01D 15/36
- (21) International Application Number: PCT/US2004/018992
- (22) International Filing Date: 15 June 2004 (15.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/480,899 24 June 2003 (24.06.2003) US
60/488,596 18 July 2003 (18.07.2003) US
- (71) Applicant (for all designated States except US): **AKZO NOBEL N.V.** [NL/NL]; Velperweg 76, NL-6824 BM Arnhem (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **ROPP, Philip, Alfred** [US/US]; 1207 Hummingbird Hill, Chapel Hill, NC 27517 (US). **MURRAY, Michael, Van, Alen** [US/US]; 1907 Fountain Ridge Road, Chapel Hill, NC 27517 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:
— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: REMOVAL OF LIPOPOLYSACCHARIDES FROM PROTEIN- LIPOPOLYSACCHARIDE COMPLEXES BY NON-FLAMMABLE SOLVENTS



(57) Abstract: During the production of recombinant proteins from gram negative bacteria, lipopolysaccharides (LPS, endotoxin) are released along with the protein of interest. In many instances, LPS will copurify with the target protein due to specific or non-specific protein-LPS interactions. We have investigated the ability of alkanediols to effect the separation of LPS from protein-LPS complexes while the complexes are immobilized on anion or cation exchange chromatographic media. Alkanediols provide a safer alternative to the use of other organics such as alcohols or acetonitrile due to their lower toxicity and decreased flammability. In addition, they are less costly than many of the detergents that have been used for such purposes. LPS removal efficiency increased with increasing alkane chain length. 1,2-alkanediols were more effective than terminal alkanediols in the separation of LPS from proteinLPS complexes.



Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.